DOCUMENT RESUME

ED 194 509 SP 016 996

AUTHOR Rosner, Frieda C.
TITLE Self-Analysis: The Promise of Inservice Education Research.
PUB DATE Nov 79
NOTE 22p.: Paper presented at a National Council of States on Inservice Education Conference (Hollywood, FL, November 11-14, 1979).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Audiovisual Aids; Classroom Observation Techniques; Educational Research; *Evaluation Criteria; Feedback; Goal Orientation; Higher Education; *Inservice Teacher Education; Interaction; *Self Evaluation (Individuals); Staff Development; Teacher Behavior; Teaching Styles; *Testing

ABSTRACT

Self evaluation may be one feasible approach to current staff development needs in the teaching profession. Some form of feedback is needed, such as cassettes, tapes, and the help of a teacher leader. For the purpose of discussion among teachers, one could play back selected interactions using a speaker, should videotaping not be possible. At the Educational Testing Service, the Teacher Programs and Services area staff are exploring the possibilities of developing National Teaching Examination modules dealing with management of the classroom: teaching observation skills, communication skills and human relations; and combining the use of films, computers, audiotapes and paper-and-pencil tests. Teacher educators, teachers, administrators, professional organizations, and state department representatives are encouraged to use educational research to support a viable inservice program linked to desired outcomes in pupils and teachers. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED194509

CONFERENCE TOPIC: RESEARCH ON STAFF DEVELOPMENT
AND INSERVICE EDUCATION

TITLE OF PRESENTATION: SELF-ANALYSIS: THE PROMISE OF INSERVICE EDUCATION RESEARCH

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Frieda C. Rosner

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Presenter: Frieda C. Rosner, Ph.D.
Program Administrator
Teacher Programs and Services
National Teacher Examinations
Educational Testing Service
Princeton, New Jersey

SP 016 996

SELF-ANALYSIS: THE PROMISE OF INSERVICE EDUCATION RESEARCH

Introduction

Research on staff development and inservice education will be discussed by highlighting a naturalistic study of instructional model building conducted from 1974-79 at Educational Testing Service in Princeton, New Jersey. This study investigated differential inservice teacher training in an experimental and traditional preschool classroom. Records of observations using a systematic observational instrument, designed to identify and monitor specified teacher strategies, were analyzed and used as part of an inservice staff development program. Actual classroom events were preserved with audio- and videotapes which were used to provide feedback during teacher inservice seminars. The potential contribution of this self-directed mode of professional development relies on:

- a theory of learning which applies to teacher and pupils
- goal-directed teacher behavior
- a methodology for teacher feedback utilizing media, specifically audiotape
- opportunity for classroom translation of theoretical constructs, with specific applications for curriculum
- systematic observation of teacher-pupil interaction to focus on formative (process) as well as summative (product) evaluation

Edelfeit's definition of inservice education, which distinguishes preservice entry level standards from improved competence, and Joyce, Howey and Yarger's construct of "self-appraisal" reflect the re-emergence of practitioner involvement in research on teaching, which had marked the development of educational research in the 1920's and 1930's. The concept of "action research" is revisited and extended, as illustrated in recent projects underway at the Institute of Research on Teaching at Michigan State University where the author recently interacted with staff consisting of education faculty, researchers and teachers collaborating as part of their inservice staff development program.

The following outline summarizes the planned presentation. Provision is made for audience participation through videotape and audiotape samples, and through actual analysis of teacher strategies using the Teacher Observation Instrument.

Outline of Presentation

1. Forces Impacting On Inservice Education

   1.1. The External Environment

   Various environmental trends impacting on teacher education include: competency-based teacher education, the basic skills movement, legislative actions, "professionalization" concerns, economic pressures, growth of educational media and technology, and special interest groups demanding a share in educational decision-making. These will be highlighted and related to inservice goals and teacher testing issues.

   1.2. The Professional Environment

   Selected factors contributing to "de-professionalization" sentiment which hinders professional development are discussed. They include: inadequate use of research findings, need for broad-based, field-based research, weakness of school-university relations, limited use of media for self-appraisal, continued professional education vs. "lay-ons," overemphasis on product (effects) without concern for process (teaching), failure to replicate teaching "successes," the problem of motivation, incentives, and evaluation, need for acceptable feedback mechanisms, and economic constraints involved in the "marketing" of inservice.

2. Theory Into Practice: The Instrument, The Media, and Professional Growth

   The author's research study at ETS involves a neo-Piagetian view of child development and a theory of teaching which links teaching strategies to the development of representational thinking. Symbolic development is viewed as precursory to success in school learning as it is presently operationalized. A Teacher Observation Instrument is demonstrated to show the link between teacher demand systems (strategies) and a child's thinking behavior. Results of this descriptive study demonstrate the use of this tool for identifying, training and monitoring teaching strategies used in classroom settings which take account of how children develop—cognitively, socially and personally. The inservice methodology used with the experimentally trained teachers resulted in marked changes in their attitudes, knowledges and classroom applications, as compared to the control teachers. Continued professional development shifted to a self-appraisal mode using an audiotaped feedback system.

3. Implications for Inservice Education

   3.1. Self-evaluation

   3.2. Staff development programs

   3.3. School-community effects

   3.4. Teaching careers: a continuum

   3.5. Teacher testing and instructional evaluation systems

Format of Presentation

The hour-long presentation will be divided into three portions devoted to: (1) Introductory statement, presentation of theory, highlights of research study; (2) Audience-speaker interaction on Teacher Observation Instrument, portions of which will be distributed and described; (3) Listening and viewing* selected portions of audio- and videotaped teacher-child classroom interactions. The audience will be asked to code and analyze verbatim transcripts that are included in their handout.

---

*Video taped presentation will depend on the availability of equipment.

The National Council of States
on Inservice Education (NCSIE)
Hollywood, Florida
November 11-14, 1979

Conference Topic

RESEARCH ON STAFF DEVELOPMENT AND INSERVICE EDUCATION

Title of Presentation

SELF ANALYSIS: THE PROMISE OF INSERVICE EDUCATION RESEARCH

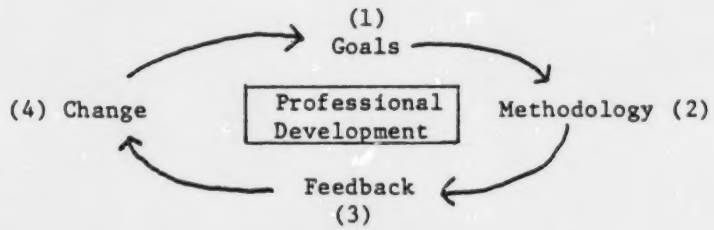
Presenter

Frieda C. Rosner, Ph.D
Program Administrator
Teacher Programs and Services
National Teacher Examinations
Educational Testing Service
Princeton, New Jersey

INTRODUCTION

Several assumptions underlie the concept of self-assessment as it relates to inservice education. First, it assumes that teacher self-assessment is motivated and directed by a set of clearly articulated goals. Second, it implies that the methodological capability for self-appraisal exists. Third, the teacher is expected to adapt a researcher's modality in planning and implementing instruction, asking what works for whom in what context, given his or her particular teaching style. In this method, alternatives are tested and evaluated as a theory of teaching begins to evolve. The fourth assumption is that some feasible, self-monitoring system is available to the teacher who is attempting to modify particular classroom strategies. And five, there is an assumption that the effect of these alterations in teaching (i.e. changes in the teacher and in the children) can be observed, feeding back into the original rationale or framework that contributed to the goal-setting in the first place (see Figure 1.)

Figure 1. Self-Assessment Cycle



The research to be described in this paper considers a model for inservice education that emphasizes goal-setting, a methodology for monitoring progress, and a system of feedback that links goals to observable changes in classroom behaviors of teachers and children.

To provide a context for discussing the present climate of inservice education and teacher research, I will describe some of the forces in the external and professional environment that are impacting on the profession of teaching.

Secondly, I will highlight a naturalistic study of instructional model building conducted from 1974-1979 at Educational Testing Service in Princeton, New Jersey. This study demonstrates marked changes in selected preschool classroom strategies resulting from inservice training which involved use of a Teacher Observation instrument and a self-appraisal test mode. Audio-tapes of experimentally-trained in contrast to non-trained teachers will illustrate the use of research-based strategies designed to help young children develop competence in representational thinking skills. These skills prepare the child for problem-solving, language facility, and other higher-level symbolic thinking processes required for success in our society and schools.

I will conclude with the view that inservice professional development occurs on a career continuum, beginning with entry-level knowledges, skills and understandings and continuing through progressive mastery levels. This view takes account of the teacher as a learner and of learning as a dynamic, interactive process resulting in increased self-consciousness on the part of the teacher regarding the act of teaching.

A. Environmental Forces Impacting on the Teaching Profession

1. <u>Anti-testing sentiment, accountability and teacher competence</u>. Conflicting social-political tensions appear to be impacting on teacher education and the teaching profession. Recent legislation for test disclosure has focused on national standardized testing programs. It has clearly reflected a public mood of hostility toward the major testing

industries who are perceived to be exerting powerful control over the direction of peoples' futures. It has practically resulted in threatening the closing of shops of at least fifteen of the twenty or so testing companies. These smaller companies have provided important competition to the 2 or 3 major test companies who are equipped to meet the challenge. It has also resulted in forcing upon the testmaker consideration of means to counteract a history of mystification regarding test development and test practices by re-ordering their priorities. Exploration of the many untapped possibilities for the instructional value of tests has already begun.

Anti-testing sentiment and humanistic concerns, however, compete with public pressure for higher standards in public education, reflected in a return to "basic skills" and a call for "quality assurance." States have been forced to balance political-social and professional concerns in directing educational legislation. They have focused on their local educational needs, opposing the setting of standardized criteria for teacher certification and selection.

A climate of unrest and uncertainty is further intensified by economic pressures and tight budgets, a demand for accountability at all levels of authority, and a sharpened polarity between the sophisticated technology of computers and multimedia and the heightened concern for human values.

A loss of confidence in government and other "establishment" institutions is also evident. This has manifested itself in a general dissatisfaction with the quality and delivery of professional services, not only in education but in the time-honored professions of law and medicine. Special interest groups have demanded a share in educational decision-making, reflected in a proliferation of bills and laws to insure civil rights, fair selection and employment practices, test fairness and truth-in-testing.

The concerns center on standard-setting for screening, selecting, certifying, and evaluating performance. There is also a concern for maintaining and updating these standards over time. (Witness the recent focus on "professionalization" and re-certification issues.)

In education, these concerns have provided impetus for competency-based and performance-based teacher preparation programs. In attempting to identify minimum competencies required for effective teaching, educators and practitioners are wrestling with age-old questions that have plagued tests and measurement people for a long time. How can we identify teaching competency, entry-level skills and knowledge, and successive mastery levels? What criteria do we use for evaluating success on the job? Are supervisor ratings, pupil gain scores or minute job analysis check-lists appropriate? Are performance measures more valid for practicing teachers, or can a multiple-choice, paper-and-pencil test tease out those knowledges and skills necessary for successful classroom practice? What other information is available to us that would provide reliable and objective evidences of teaching competence?

Given the declining enrollment of teacher education students, and the tight teacher market, (a detailed report is available in the Chronicle of Higher Education, July 1979) increased attention is being directed to the in-service teacher who is making a long-term commitment to a career in teaching. An opportunity to improve the quality of teaching by upgrading staff development programs and expanding teacher career opportunities comes in an era when the image of the teacher is at its lowest ebb. A recent article in Phi Delta Kappan (Weaver, September 1979) and another in the Washington Post (Feinberg, October 4, 1979) have been widely quoted

by education critics. The former article reports that the academically talented and intellectually able students have increasingly been attracted away from teaching. Weaver points to declining teacher education enrollments and subsequent lowered admission standards as responsible for an unqualified pool of new teachers. He recommends that teacher education institutions prepare new career guidance programs that will address teaching opportunities in industry, mental health, human services, gerontology, criminal justice, vocational counseling, and the military. The Feinberg article focuses on the poor standardized test performance of teacher education students on both the verbal and quantitative parts of the College Boards and Graduate Record Examinations, scoring considerably below average performances. Education ranked 27th among 29 fields for which SAT scores were reported, and from 25 to 51 points below average for GRE's. Consequently, to quote a recent article in the ASCD "News Exchange" (Vol. 21, No. 5, September 1979), "tests for teachers may be a trend." The Education Commission of the States reports that in ten states, applicants for initial teaching certificates must now pass competency tests and tests for renewal of certificates are predicted. "In the fall of '77," he says, "four states, Mississippi, Louisiana, North Carolina, and West Virginia, used the National Teacher Examination for certification purposes. Since that time, legislatures or state education departments in Louisiana, Florida, Virginia, Georgia, Tennessee, and Arkansas have established testing programs for teachers." (p. 8). This pattern appears to be spreading quickly and has received public support. A recent Gallup poll (May 1979) revealed that 85% of the public sampled (a cross-section of 1,514 adults inteviewed) feel very strongly that teachers should be required to pass a state board examination in addition to meeting college requirements, and that they should be tested periodically to see if they are keeping up to date with developments in their field. (Phi Delta Kappan, October 1979)

2. Researchers and practitioners. Given this climate, it is no wonder that the mere mention of inservice education "research" seems esoteric or irrelevant. Don't teachers, the public taxpayers and educational leaders have enough to deal with, without worrying about "doing research?" Practitioner and administrator involvement in research on teaching, which had marked the development of educational research in the 1920s and 1930s, has had a rocky journey in the last three or four decades. Several factors contributing to the demise of this necessary partnership include: inadequate use of research findings, overemphasis on laboratory and exclusion of broad-based, field-based research, weakness of school-university relations, over-emphasis on product (effects) without concern for process (teaching), lack of incentives and support for in-service staff development, inability to identify ageed-upon criteria of teaching effectiveness, and a limited use of media technology in teacher training and evaluation. Edelfeld's definition of inservice education, which distinguishes preservice entry level standards from improved competence, Joyce, Howey and Yaeger's construct of "self-appraisal" (NCSIE, April 1979), and the impact of current trends described earlier have marked the dawn of a new era in the profession of teaching. My visit to R &D institutes in teacher education institutions (e.g. Institute of Research on Teaching at Michigan State) and my involvement in a new test development thrust for NTE has convinced me that the concept of "action research," naturalistic classroom study, and a focus on the practicing teacher will re-emerge. My own experiences as a NYC elementary classroom teacher, a university teacher educator, a college administrator involved in designing and coordinating field-based teacher education programs (TTT) and an educational researcher have adequately prepared me for this new era, for I now firmly believe that it is in the collaboration of the researcher and the practitioner that inservice education will thrive. (See New England

Teacher Corp Exchange, April 1979 issue for full discussion of the teacher-researcher collaboration issue.) In my role at ETS as Program Administrator of the National Teacher Examinations, working closely with a newly formed NTE Policy Council and R & D Committee, I am convinced that educational testing must assert its role as a dynamic, instructional method used to improve all aspects of education -- its goals, processes, methods and outcomes. Educational testing has been described as "a cold instrument for arbitrary selection purposes," but its potentiality to instruct, to improve and to firm up gross level judgements which may or may not be valid should be realized. (Ingenkamp, 1968). I conclude this commentary on the present scenario of the teaching profession by sharing with you some thoughts on the difficulties that attend research on classroom teaching.

First, there is the strong feeling that this sort of research may expose to public scrutiny failings which an advanced educational system should never admit. Colleges and universities responsible for teacher education are supposed to train and graduate individuals who are competent to enter classrooms; that is, they are supposed to be equipped with the critical knowledges, skills and understandings necessary to teach effectively. School systems responsible for cognitive, social and personal development of their pupils are expected to provide equitable, high quality instructional services, selecting qualified teachers who have the necessary mastery of content and skills to do the job. Teacher variables, then, are expected to vary very little -- that is if teaching is indeed the sophisticated science it is assumed to be in a technologically advanced and highly developed society.

Possible assumptions underlying the above are:

1. Our educational systems are highly sophisticated and effective;

2. Teaching is a precise, developed science. That is, we know what teachers ought to do to get kids to learn. The causal relationships between theories of teaching and theories of learning are known and teachers ought to know them; and

3. The public must never know if, in fact, we don't know.

The second problem is that educational research tends to be regarded as a luxury, except where short-term results promise economic or other concrete gain (such as test scores) that relate directly to cost-beneficial and time-beneficial school district goals. Educational research is also viewed as esoteric and difficult, if not impossible to translate into practice -- at least practice that makes a difference. The idea of a teacher as collaborator in research (as research is typically perceived) becomes even more suspect since school-based or classroom-related research has traditionally been viewed in an evaluation context where teachers bear the ultimate responsibility for pupil learning outcomes.

Possible assumptions underlying the above are:

1. To be valued, educational research must yield immediate concrete gain. It involves a product, not a process;

2. Teacher evaluation is a school district responsibility. Self-evaluation is fine, but results really come from outside pressures;

3. A teacher bears direct responsibility for a child's success or failure in school; and,

4. Research on teaching and learning has little practical value for the teacher who learns best by "experiencing."

These assumptions could be hotly debated taking either negative or positive perspectives. Certainly, we have all at one time or another engaged in arguments for or against these positions. In the research

study to be described, my own assumptions and perspectives should be clear.

It is my contention that the teacher is not infallible but is a human learner capable of improvement under certain conditions. It is also my belief that while professional development begins at the pre-service level in preparing entry-level knowledges, skills and understandings, the heart of professional growth takes place in a professional setting where professional responsibility begins. This development requires certain conditions and knowledges that grow out of a teacher's involvement as a research collaborator in an imperfect and complex setting. It is imperfect because causal relationships between teaching and learning are, at this stage, hypotheses to be tested. It is complex because all variables may not be known and all the conditions under which they vary are not clearly explicated. It is also complex because school variables interact with a host of other factors that may not be controllable or even identifiable.

A teacher is involved as a researcher when the following conditions and knowledges exist:

- A theory of learning which applies to both teacher and pupils guides the teacher's process of professional development.
- Teacher behavior is goal directed.
- A methodology for teacher feedback, utilizing media such as audiotape or videotape, is available.
- There is opportunity for classroom translation of theoretical constructs, with specific applications for curriculum.
- Systematic observations of teacher-pupil interaction focus on formative (process) as well as summative (product) evaluation.

• Teachers have an opportunity, as professionals, to share their growth process with their colleagues -- discussing, refining and re-organizing their information and skills. Since teachers appear to have unshaken faith in their own subjective impressions, (Ingenkamp, 1968, Madeus, 1979) they will "buy in" to a system where their own judgements are fairly weighted in proportion to the validity accorded to psychometric procedures.

We need to examine our beliefs as we buy into any system or model because as Polanyi has reminded us (1958), these theoretical assumptions provide the directions, conditions and constraints of a model and an "interpretive framework" for structuring research.

B. Research Into Practice

1. Developmental theory and classroom practice. Dr. Irving Sigel, one of our distinguished Research Scientists at ETS, has developed what he terms a "distancing model" of teaching. I was fortunate to have spent a number of years working with him to develop the teacher model, to operationalize it, and to systematically observe trained teachers using an instrument we designed for this purpose. The inservice training of the experimental teachers observed over the five year period involved some home reading, opportunity in school for discussions with colleagues and opportunity to use audiotapes, videotapes, and a self-monitoring instrument. (The videotapes are great, but not necessary to the training.) They received guidance by someone (it could have been another teacher; in this case, it was the school director) who thoroughly understood and accepted the theoretical framework and the goals, and could help translate these into practical classroom strategies and curriculum development. My study involved 2 years of intensive systematic observation of 4 of

these teachers in the preschool setting. It was a pilot in that we developed the instrument the first year and used it the second, and because the school was located at ETS rather than in an operating school district. The children were 3 to 5 years of age and were representative of a cross-section of backgrounds one would typically find in New Jersey. I have since informally tested my observations of these teaching strategies in elementary and high schools, in an institution for multiply handicapped children (Woodhaven Hospital in Philadelphia), in an international school in Zurich, and in preschool centers and elementary schools in Birmingham, Alabama. The program has also been tested with parent groups in community-centered educational programs. I mention this because I believe that the behaviors we will be talking about can be trained and observed at all levels in many settings, as you adapt it, and that at some point, teachers can work alone and/or train other teachers in the process.

A brief description of the theoretical base for this model and instrument, upon which the distancing inservice training was based, should help you to understand the transcribed audiotaped examples of distancing and non-distancing teachers. The Teacher Observation instrument will introduce you to the distancing teaching strategies which extend beyond verbal interactions. But for the purposes of this study and our discussion, only verbal behaviors will be described here.

The Distancing model is based on the notion of dialectics, in which the significant agent (in this case, the teacher) through interaction with the learner (in this case the child) creates an appropriate tension or conflict. "Dialectics is the process of interact--conflict--resolution--equilibration which results in a temporary resolution until the next discrepancy occurs----" (Sigel, 1972). The teacher introduces the discrepancy (or mismatch or

question) through "distancing" in order to stimulate the child to think in representational terms. Resolution of the problem or task is achieved through the child's need to represent. To understand how this takes place, we need some definitions:

Representation involves mental actions which in the very young begin to parallel physical or concrete actions. As symbolic behavior develops, the child relies more and more on mental representations to refer to things, events and feelings not only in the immediate, palpable present, but for the distant, past and future references he needs to make. He must also anticipate and make inferences, remember, generalize and at a very abstract level as he progresses, he must be able to transform changes of states. An example of the latter is to be able to understand why ice will melt under heated conditions, and that the element itself is comparable in certain respects. The ability to handle language, numbers, reading, ideas, etc. all rely on representational competence. Even personal and social insights involved in communicating, adapting, and empathizing rely on a level of representational thought.

Piaget has helped us to understand how representational thought develops, and how it contributes to the development of concepts from early childhood through adulthood. (Piaget, 19) Werner and Kaplan studied the development of symbols in retarded and emotionally disturbed children and adults. Their contributions sighificantly affected developmental theories about thinking because they were primarily concerned with the affective and social factors that contribute to the formation of symbols. The term "distancing" comes from their work. (Werner & Kaplan, 1962)

"Distancing" refers to the separation or level of distinction between a symbol (or representation) and its referent (an object, event, emotional

state, etc.). Werner and Kaplan concluded that, in the early stages, symbols and referents are one, and as thinking develops, they become more and more distinct. The mother, milk, the sound of mother approaching, the sight of a bottle, or the touch and smell of the breast, and the child's hunger are, at first, one and the same in the mind of an infant. The distinction between self and other begins as the child interacts with his environment. Sensory stimulations are, in time developed, language begins and ideas take shape in a process of restructuring and ordering; a kind of file system develops in which concepts help the child to cluster the bits and pieces he experiences. As knowledge grows, objectivation takes place with use of labels (or words) and abstractions involving comparisons, inferences and generalizations. However, as we all recognize, many of those early associations remain. They explain some of the distortions or misrepresentations we develop. The affective-social links to symbols involve significant socialization agents with whom we interact, and the demand systems or expectancies imposed by them.

Sigel further developed the idea of these significant interactions, building on Bruner's focus on the cultural determinants of thinking (Bruner, 1977). He attempted to operationalize those demands or expectancies as they occur between a teacher and students. (He has recently applied this to a parent-child study of distancing.)

Distancing strategies for Sigel are defined as mental operational demands on the child to represent -- to distance his thinking, to structure tasks, and to manage self and self-other behaviors. Distancing strategies call on the child to differentiate the environment in time (i.e. present-past-future), in space (here and not-here), and in appearance as opposed to reality (observable and inferential), thus contributing to distance between the subject and object of thought. A teaching strategy which makes a

particular representational demand on the child's thinking is termed a "distancing" strategy .

Referring to the Teacher Observation Instrument, you will note that these strategies become more and more complex. You will also note that the strategies are organized to be trained and used in cognitive situations. On page 12 you will notice that two other areas are introduced -- Management of Tasks and Management of Child's Behavior. For our purposes in this pilot preschool setting, these types of behaviors were separately observed to distinguish them from the mental operations involved in more cognitively oriented tasks. You or your teachers may want to adapt parts, or restructure your own observation tool to suit your particular needs. This is quite possible once you understand the principle underlying the tool.

The teachers who used this selected and coded portions of their own playbacks of teacher-child interactions using an outline they devised. An essential aspect of distancing is the form of the teacher's statement (ask-tell), the tense (past-present-future) and the level (Label----Conclude). These teachers were also interested in the context of the interaction-cognitive problem, organization of the task, or personal-social area. They noted large group, small group or one-to-one teacher child interactions. Our study explored all these variables as well as contextual and subject-area variations throughout the school year.

The net results of the teacher training in this structure, without going into all the statistics and details, is that teachers who were trained in distancing increased their questions (as compared to telling), talked less, used more representational demands on children to reproduce or recall, anticipate, infer and, in general, to use higher-level problem-solving thinking behaviors. Their awareness of their own demands, and of their children's

responses in terms of levels of thinking was sharpened and they were able to develop lessons and design a curriculum with selected activities, materials and subjects that were geared to encourage representation at all these levels. For example, science and cooking activities were increased since they provided opportunities for transformation, inference or generalization types of representations. The teachers' questions increased from lower-level label or recall kinds of questions to more complex questions which required the children to analyze, synthesize and form conclusions. The exciting part was that the teacher was able to understand and direct the link between a child's thinking and teacher choice of teaching strategy, materials, curriculum, and even classroom arrangement and organization. It made sense, and feedback in this concrete form made it possible to identify success and replicate it. Planning was possible because all these elements -- teaching strategy, materials, curriculum, class organization -- were interconnected, and could be related to specified objectives for the child to behave in a certain way, and for teaching goals to be directed toward those learning objectives.

Conclusion

The implications of this study and of the trends I have cited are clear. Self-evaluation may be one feasible approach to current staff development needs in the teaching profession. In order for teaching to be a profession and a career, it must have growth opportunities. In order for that to actually happen, it must be cost-and time-beneficial, but more importantly it must work for the teacher and his/her children, thus offering an incentive system. Some form of feedback will be needed. A casette, tapes, and teacher leader will put the process in operation. For the purposes of discussion among teachers, one could play back selected interactions using a speaker, should videotaping not be possible.

At ETS, the Teacher Programs and Services area staff are exploring the

possibilities of developing NTE modules dealing with management of the classroom, teaching observation skills, communication skills and human relations, combining the use of films, computers, audiotapes and paper-and-pencil tests. The challenge for the future of the teaching profession for preservice and inservice growth is recognized. Teacher educators, teachers, administrators, professional organizations and state department representatives are all encouraged to use educational research to support a viable inservice program linked to desired outcomes in pupils and teachers. We need you to support educational research and development programs which contribute to the development of teacher proficiency and competence throughout a career continuum. We need all the help we can get.